10/520,763

```
FILE 'HOME' ENTERED AT 20:52:13 ON 01 NOV 2007

=> caplus
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=> file caplus
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                                                          ENTRY    SESSION
FULL ESTIMATED COST                                        0.63       0.63

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FILE LAST UPDATED: 31 Oct 2007  (20071031/ED)

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=> s Microfluidic or microchip or micro-chip or micro (w) chip or microfabricated
(5W) chip or microdevice or micro-device or micro (w) device  or microchannel or
micro-channel or micro (w) channel
          8872 MICROFLUIDIC
          1857 MICROFLUIDICS
          9760 MICROFLUIDIC
                 (MICROFLUIDIC OR MICROFLUIDICS)
          4464 MICROCHIP
          1289 MICROCHIPS
          4956 MICROCHIP
                 (MICROCHIP OR MICROCHIPS)
        177488 MICRO
           312 MICROS
        177785 MICRO
                 (MICRO OR MICROS)
         86359 CHIP
         47435 CHIPS
        115962 CHIP
                 (CHIP OR CHIPS)
           198 MICRO-CHIP
                 (MICRO(W)CHIP)
        177488 MICRO
           312 MICROS
        177785 MICRO
                 (MICRO OR MICROS)
         86359 CHIP
         47435 CHIPS
```

```
        115962 CHIP
                 (CHIP OR CHIPS)
           198 MICRO (W) CHIP
          3213 MICROFABRICATED
         86359 CHIP
         47435 CHIPS
        115962 CHIP
                 (CHIP OR CHIPS)
           238 MICROFABRICATED (5W) CHIP
           805 MICRODEVICE
           883 MICRODEVICES
          1437 MICRODEVICE
                 (MICRODEVICE OR MICRODEVICES)
        177488 MICRO
           312 MICROS
        177785 MICRO
                 (MICRO OR MICROS)
        864851 DEVICE
        653924 DEVICES
       1240822 DEVICE
                 (DEVICE OR DEVICES)
           842 MICRO-DEVICE
                 (MICRO(W)DEVICE)
        177488 MICRO
           312 MICROS
        177785 MICRO
                 (MICRO OR MICROS)
        864851 DEVICE
        653924 DEVICES
       1240822 DEVICE
                 (DEVICE OR DEVICES)
           842 MICRO (W) DEVICE
          6635 MICROCHANNEL
          3414 MICROCHANNELS
          8235 MICROCHANNEL
                 (MICROCHANNEL OR MICROCHANNELS)
        177488 MICRO
           312 MICROS
        177785 MICRO
                 (MICRO OR MICROS)
        299809 CHANNEL
        170292 CHANNELS
        378461 CHANNEL
                 (CHANNEL OR CHANNELS)
          1559 MICRO-CHANNEL
                 (MICRO(W)CHANNEL)
        177488 MICRO
           312 MICROS
        177785 MICRO
                 (MICRO OR MICROS)
        299809 CHANNEL
        170292 CHANNELS
        378461 CHANNEL
                 (CHANNEL OR CHANNELS)
          1559 MICRO (W) CHANNEL
L1       23087 MICROFLUIDIC OR MICROCHIP OR MICRO-CHIP OR MICRO (W) CHIP OR
               MICROFABRICATED (5W) CHIP OR MICRODEVICE OR MICRO-DEVICE OR
              MICRO (W) DEVICE  OR MICROCHANNEL OR MICRO-CHANNEL OR MICRO (W)
              CHANNEL

=> s Electroosmotic or electro (w) osmotic or electro-osmotic
          5134 ELECTROOSMOTIC
             1 ELECTROOSMOTICS
          5134 ELECTROOSMOTIC
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```
                (ELECTROOSMOTIC OR ELECTROOSMOTICS)
        88898 ELECTRO
            8 ELECTROS
        88905 ELECTRO
                (ELECTRO OR ELECTROS)
        56946 OSMOTIC
           25 OSMOTICS
        56957 OSMOTIC
                (OSMOTIC OR OSMOTICS)
          784 ELECTRO (W) OSMOTIC
        88898 ELECTRO
            8 ELECTROS
        88905 ELECTRO
                (ELECTRO OR ELECTROS)
        56946 OSMOTIC
           25 OSMOTICS
        56957 OSMOTIC
                (OSMOTIC OR OSMOTICS)
          784 ELECTRO-OSMOTIC
                (ELECTRO(W)OSMOTIC)
L2         5736 ELECTROOSMOTIC OR ELECTRO (W) OSMOTIC OR ELECTRO-OSMOTIC

=> s Electrophoretic
        95755 ELECTROPHORETIC
           10 ELECTROPHORETICS
L3        95757 ELECTROPHORETIC
                (ELECTROPHORETIC OR ELECTROPHORETICS)

=> s Electrophoresis
       219190 ELECTROPHORESIS
            2 ELECTROPHORESISES
L4       219190 ELECTROPHORESIS
                (ELECTROPHORESIS OR ELECTROPHORESISES)

=> s Electrochromatograph######
L5         3845 ELECTROCHROMATOGRAPH######

=> s Chromatograph######
       425411 CHROMATOGRAPH######
       650229 CHROMATOG
         3551 CHROMATOGS
       652798 CHROMATOG
                (CHROMATOG OR CHROMATOGS)
L6       799460 CHROMATOGRAPH######
                (CHROMATOGRAPH###### OR CHROMATOG)

=> d his

     (FILE 'HOME' ENTERED AT 20:52:13 ON 01 NOV 2007)

     FILE 'CAPLUS' ENTERED AT 20:53:52 ON 01 NOV 2007
L1         23087 S MICROFLUIDIC OR MICROCHIP OR MICRO-CHIP OR MICRO (W) CHIP OR
L2          5736 S ELECTROOSMOTIC OR ELECTRO (W) OSMOTIC OR ELECTRO-OSMOTIC
L3         95757 S ELECTROPHORETIC
L4        219190 S ELECTROPHORESIS
L5          3845 S ELECTROCHROMATOGRAPH######
L6        799460 S CHROMATOGRAPH######

=> s L2 or L3 or L4 or L5 or L6
L7      1033696 L2 OR L3 OR L4 OR L5 OR L6

=> s L1 or L7
L8      1052956 L1 OR L7
```

```
=> s ((Polyhedral or cage) (p) (Polysilsesquioxane# or polyorganosilsesquioxane# or
organopolysilsesquioxane# or silsesquioxane# or octasilsesquioxane#)) or POSS
          6787 POLYHEDRAL
            18 POLYHEDRALS
          6800 POLYHEDRAL
                 (POLYHEDRAL OR POLYHEDRALS)
         24701 CAGE
         10580 CAGES
         32147 CAGE
                 (CAGE OR CAGES)
           669 POLYSILSESQUIOXANE#
           114 POLYORGANOSILSESQUIOXANE#
            10 ORGANOPOLYSILSESQUIOXANE#
         12610 SILSESQUIOXANE#
           208 OCTASILSESQUIOXANE#
          1289 (POLYHEDRAL OR CAGE) (P) (POLYSILSESQUIOXANE# OR POLYORGANOSILSE
               SQUIOXANE# OR ORGANOPOLYSILSESQUIOXANE# OR SILSESQUIOXANE# OR
              OCTASILSESQUIOXANE#)
          1144 POSS
          1190 POSSES
          2334 POSS
                 (POSS OR POSSES)
L9        2805 ((POLYHEDRAL OR CAGE) (P) (POLYSILSESQUIOXANE# OR POLYORGANOSILS
               ESQUIOXANE# OR ORGANOPOLYSILSESQUIOXANE# OR SILSESQUIOXANE# OR
              OCTASILSESQUIOXANE#)) OR POSS

=> s Methacryl###### or acryl###### or meth (w) acryl######
        271397 METHACRYL######
        431383 ACRYL######
         39687 METH
             3 METHS
         39689 METH
                 (METH OR METHS)
        431383 ACRYL######
         35620 METH (W) ACRYL######
L10     567454 METHACRYL###### OR ACRYL###### OR METH (W) ACRYL######

=> s L9 (L) L10
L11        221 L9 (L) L10

=> d his

     (FILE 'HOME' ENTERED AT 20:52:13 ON 01 NOV 2007)

     FILE 'CAPLUS' ENTERED AT 20:53:52 ON 01 NOV 2007
L1        23087 S MICROFLUIDIC OR MICROCHIP OR MICRO-CHIP OR MICRO (W) CHIP OR
L2         5736 S ELECTROOSMOTIC OR ELECTRO (W) OSMOTIC OR ELECTRO-OSMOTIC
L3        95757 S ELECTROPHORETIC
L4       219190 S ELECTROPHORESIS
L5         3845 S ELECTROCHROMATOGRAPH######
L6       799460 S CHROMATOGRAPH######
L7      1033696 S L2 OR L3 OR L4 OR L5 OR L6
L8      1052956 S L1 OR L7
L9         2805 S ((POLYHEDRAL OR CAGE) (P) (POLYSILSESQUIOXANE# OR POLYORGANOS
L10      567454 S METHACRYL###### OR ACRYL###### OR METH (W) ACRYL######
L11         221 S L9 (L) L10

=> s L7 and L11
L12           9 L7 AND L11
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(FILE 'HOME' ENTERED AT 20:52:13 ON 01 NOV 2007)

FILE 'CAPLUS' ENTERED AT 20:53:52 ON 01 NOV 2007

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L1        23087 S MICROFLUIDIC OR MICROCHIP OR MICRO-CHIP OR MICRO (W) CHIP OR
L2         5736 S ELECTROOSMOTIC OR ELECTRO (W) OSMOTIC OR ELECTRO-OSMOTIC
L3        95757 S ELECTROPHORETIC
L4       219190 S ELECTROPHORESIS
L5         3845 S ELECTROCHROMATOGRAPH######
L6       799460 S CHROMATOGRAPH######
L7      1033696 S L2 OR L3 OR L4 OR L5 OR L6
L8      1052956 S L1 OR L7
L9         2805 S ((POLYHEDRAL OR CAGE) (P) (POLYSILSESQUIOXANE# OR POLYORGANOS
L10      567454 S METHACRYL###### OR ACRYL###### OR METH (W) ACRYL######
L11         221 S L9 (L) L10
L12           9 S L7 AND L11
```

=> d L12 1-9 ibib so abs

L12 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:961366 CAPLUS <<LOGINID::20071101>>

TITLE: Thermal stability of POSS/methylsilicone nanocomposites

AUTHOR(S): Liu, Y. R.; Huang, Y. D.; Liu, L.

CORPORATE SOURCE: Polymer Materials and Engineering Division, Department of Applied Chemistry, Faculty of Science, Harbin Institute of Technology, Harbin, 150001

SOURCE: Composites Science and Technology (2007), 67(13), 2864-2876
CODEN: CSTCEH; ISSN: 0266-3538

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

SO Composites Science and Technology (2007), 67(13), 2864-2876
CODEN: CSTCEH; ISSN: 0266-3538

AB Methylsilicone nanocomposites containing polyhedral oligomeric silsesquioxane (POSS) were prepared, including three kinds of POSS silanols (TriSilanolPhenyl-POSS, TriSilanolIsobutyl-POSS and MonoSilanolIsobutyl-POSS) reinforced methylsilicone through chemical modification method and one kind of non-hydroxyl-containing POSS (Methacryl-POSS) modified methylsilicone through phys. blend. The structures of the obtained hybrid materials were characterized with Gel Permeation Chromatograph (GPC), Fourier transform IR (FTIR) and transmission electron microscopy (TEM). The GPC and FTIR spectra suggested successful bonding of three kinds POSS silanols and methylsilicone resin. TEM anal. showed that POSS silanols can dissolve in methylsilicone resin at the mol. level. However, there was some aggregation of Methacryl-POSS in the polymer resin systems. Thermal stability of POSS/methylsilicone nanocomposites was investigated by thermogravimetric anal. (TGA), solid-state 29Si NMR and XPS. All these techniques showed that POSS incorporation result in increased decomposition temps. and thermal oxidation resistance. Chemical bonded POSS silanols reinforced methylsilicone nanocomposites are thermally more stable than the original methylsilicone, primarily by reducing the effects of silanol end groups on the thermolysis through condensation reaction of Si-OH groups and the nanoscaled dispersion of POSS cages in methylsilicone matrixes. For the phys. mixed system, the enhancement of thermal stability could be mainly ascribed to the nanoreinforcement effect of Methacryl-POSS on the polymer matrix. The formation of protective inorg. SiO2 layer and the hydrogen bonding existed between the hydroxyl group and the siloxane groups of four kinds of POSS are also important factors for the improvement of the thermal stability of

methylsilicone.

L12 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:825685 CAPLUS <<LOGINID::20071101>>
DOCUMENT NUMBER: 147:386312
TITLE: Synthesis and Characterization of Hyperbranched Polyethylenes Tethered with Polyhedral Oligomeric Silsesquioxane (POSS) Nanoparticles by Chain Walking Ethylene Copolymerization with Acryloisobutyl-POSS
AUTHOR(S): Wang, Jianli; Ye, Zhibin; Joly, Helen
CORPORATE SOURCE: School of Engineering, Laurentian University, Sudbury, ON, P3E 2C6, Can.
SOURCE: Macromolecules (Washington, DC, United States) (2007), 40(17), 6150-6163
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
SO Macromolecules (Washington, DC, United States) (2007), 40(17), 6150-6163
CODEN: MAMOBX; ISSN: 0024-9297
AB Hyperbranched polyethylenes containing covalently tethered polyhedral oligomeric silsesquioxane (POSS) nanoparticles were synthesized in this work by chain walking ethylene copolymn. with a POSS macromonomer bearing a polar acrylate group, acryloisobutyl-POSS. The unique hyperbranched chain topol. of these polymers was achieved owing to the chain walking mechanism of the Pd-diimine catalyst, [(ArN:C(Me)-(Me)C:NAr)Pd(CH3)(N.tplbond.CMe)]SbF6 (Ar = 2,6-(iPr)2C6H3). Regardless of its bulky structure and polar nature, the acryloisobutyl-POSS macromonomer was successfully copolymd. to give a range of POSS-ethylene copolymers with the POSS macromonomer content up to 35 wt %. A systematic study of the effects of covalent POSS incorporation on the polymer properties was undertaken using techniques including gel permeation chromatog. with online viscometry (GPC-VIS), X-ray diffraction (XRD), differential scanning calorimetry (DSC), thermogravimetric anal. (TGA), and rheometry. It was found from GPC-VIS measurements that the covalent incorporation of the high-mass POSS nanoparticles reduces significantly the intrinsic viscosity of the copolymers compared to homopolyethylenes of the same mol. weight, owing to the highly compact spherical cage structure of the POSS nanoparticles. Thermal studies confirm that the POSS incorporation enhances significantly the thermal oxidative stability of the polymers in air, and the copolymer glass transition temperature increases with POSS macromonomer content. The XRD study showed aggregation of POSS nanoparticles in the copolymers, leading to the formation of crystalline POSS domains. Rheol. measurements demonstrate that the covalently tethered POSS nanoparticles greatly reinforce polymer rheol. properties. In particular, gel-like rheol. behavior was observed in the POSS copolymers. This gelation behavior is attributed to the aggregation/interactions of POSS nanoparticles, which lead to the construction of a phys. network system throughout the polymer nanocomposite materials.
REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:194168 CAPLUS <<LOGINID::20071101>>
TITLE: Self-assembly of methacrylic nanostructured copolymers containing polyhedral oligomeric silsesquioxanes
AUTHOR(S): Molina, D.; Levi, M.; Turri, S.; Penso, M.
CORPORATE SOURCE: Dipartimento di Chimica, Materiali e Ingegneria Chimica "G. Natta", Politecnico di Milano, Milan,

20133, Italy
SOURCE: e-Polymers (2007) No pp. given
CODEN: EPOLCI
URL: http://www.e-polymers.org/papers/sturri_260107.pdf
PUBLISHER: European Polymer Federation
DOCUMENT TYPE: Journal; (online computer file)
LANGUAGE: English

SO e-Polymers (2007) No pp. given
CODEN: EPOLCI
URL: http://www.e-polymers.org/papers/sturri_260107.pdf

AB Two hybrid copolymer series obtained by free-radical copolymn. of methacrylcyclohexyl Polyhedral oligomeric silsesquioxane (POSS) with Bu methacrylate or 2-ethylhexylmethacrylate were characterized by 1H-NMR spectroscopy, gel permeation chromatog. (GPC), X-rays Diffraction (XRD), differential scanning calorimetry (DSC) and thermo-gravimetric anal. (TGA). Reactivity ratios were calculated by low yield composition data suggesting the formation of random copolymers with low probability of poly-POSS sequences. XRD studies showed the crystallization behavior of the inorg. phase independently on the POSS content; however sample processing by solvent casting effectively hindered the copolymer self-assembling ability. DSC suggests the formation of polyphasic structures with Tg increasing with POSS content, and with endothermal peaks occurring at higher temperature Finally TGA shows an improved thermal stability of hybrid copolymers with char yield correlated to the level of inorg. phase.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1322960 CAPLUS <<LOGINID::20071101>>
DOCUMENT NUMBER: 147:26189
TITLE: N-methacryloyl-(L)-histidine methyl ester carrying porous magnetic beads for metal chelate adsorption of cytochrome c
AUTHOR(S): Akkaya, Birnur; Uzun, Lokman; Candan, Ferda; Denizli, Adil
CORPORATE SOURCE: Department of Chemistry, Cumhuriyet University, Sivas, Turk.
SOURCE: Materials Science & Engineering, C: Biomimetic and Supramolecular Systems (2007), 27(1), 180-187
CODEN: MSCEEE; ISSN: 0928-4931
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

SO Materials Science & Engineering, C: Biomimetic and Supramolecular Systems (2007), 27(1), 180-187
CODEN: MSCEEE; ISSN: 0928-4931

AB A magnetic metal-chelate adsorbent utilizing N-methacryloyl-(L)-histidine Me ester (MAH) as a metal-chelating ligand was prepared MAH was synthesized using methacryloyl chloride and L-histidine Me ester. Magnetic beads with an average diameter of 50-100 μm were produced by suspension polymerization of ethylene glycol dimethacrylate (EGDMA) and MAH carried out in a dispersion medium. Sp. surface area of the magnetic beads was found to be 80 m2/g. Elemental anal. of the magnetic beads for nitrogen was estimated as 70 μmol MAH/g polymer. Magnetic beads were complexed with the Cu2+ ions directly via MAH for the adsorption of cytochrome c from aqueous solns. The cytochrome c adsorption on the mag-poly(EGDMA-MAH) beads was 51 mg/g. Cu2+ complexing increased the cytochrome c adsorption significantly. The maximum cytochrome c adsorption

capacity of the Cu2+-chelated beads (carrying 68 μmol Cu2+ per g of polymer) was found to be 222 mg/g at pH 8.0 in phosphate buffer. Cytochrome c adsorption decreased with increasing temperature Cytochrome c mols. could be reversibly adsorbed and desorbed ten times with the magnetic adsorbents without noticeable loss in their cytochrome c adsorption capacity. The resulting magnetic chelator beads posses excellent long term storage stability.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:964381 CAPLUS <<LOGINID::20071101>>
DOCUMENT NUMBER: 145:489783
TITLE: Investigation of thermodynamic properties of poly(methyl methacrylate-co-n-butyl acrylate-co-cyclopentyl styryl-polyhedral oligomeric silsesquioxane) by inverse gas chromatography
AUTHOR(S): Zou, Qi-Chao; Zhang, Shi-Ling; Wang, Shi-Min; Wu, Li-Min
CORPORATE SOURCE: Faculty of Chemistry and Material Science, Hubei University, Wuhan, 430062, Peop. Rep. China
SOURCE: Journal of Chromatography, A (2006), 1129(2), 255-261 CODEN: JCRAEY; ISSN: 0021-9673
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

SO Journal of Chromatography, A (2006), 1129(2), 255-261 CODEN: JCRAEY; ISSN: 0021-9673

AB The thermodn. properties of poly(Me methacrylate-co-Bu acrylate-co-cyclo -pentylstyryl polyhedral oligomeric silsesquioxane) (poly(MMA-co-BA-co-styryl-POSS)) were investigated by means of inverse gas chromatog. (IGC) using 20 different kinds of solvents as the probes. Some thermodn. parameters, such as molar heats of sorption, weight fraction activity coefficient, Flory-Huggins interaction parameter, partial molar heats of mixing and solubility parameter were obtained to judge the interactions between POSS-contained polymers and solvents and the solubility of the polymers in these solvents. It was found that acetates, aromatic hydrocarbons and hydrocarbon halides were good solvents, n-hexane, ethanol, n-propanol, n-butanol and n-pentanol were moderate solvents, while n-heptane, n-octane, n-nonane, n-decane and methanol were poor solvents for all POSS-contained polymers within the exptl. temperature range. Incorporation of POSS in polymer increased the solubility of polymers in solvents, and the more the POSS in polymer was, the better the solubility was and stronger the hydrogen bonding interaction was, but the POSS content in polymers seemed to have no obvious influence on the solubility parameter of polymers.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:228849 CAPLUS <<LOGINID::20071101>>
DOCUMENT NUMBER: 144:468715
TITLE: Surface characterization of poly(methyl methacrylate-co-n-butyl acrylate -co-cyclopentylstyryl-polyhedral oligomeric silsesquioxane) by inverse gas chromatography
AUTHOR(S): Zou, Qi-Chao; Zhang, Shi-Ling; Tang, Qing-qiong; Wang, Shi-Min; Wu, Li-Min
CORPORATE SOURCE: Faculty of Chemistry and Material Science, Hubei University, Wuhan, 430062, Peop. Rep. China

SOURCE: Journal of Chromatography, A (2006), 1110(1-2), 140-145
CODEN: JCRAEY; ISSN: 0021-9673
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

SO Journal of Chromatography, A (2006), 1110(1-2), 140-145
CODEN: JCRAEY; ISSN: 0021-9673

AB The surface properties of poly(Me methacrylate-co-Bu acrylate-co-cyclopentylstyryl polyhedral oligomeric silsesquioxane) (poly(MMA-co-BA-co-styryl-POSS)) were studied by inverse gas chromatog. (IGC) using 10 non-polar and polar solvents as the probes. Thermodn. parameters of adsorption, e.g., specific retention volume, the dispersive component of the surface free energy, the specific interaction contribution to the free energy of adsorption and the acid/base consts. were obtained to study the interactions between the surfaces of the copolymers and different solvents. Incorporation of styryl-POSS into polymer resulted in increasing interactions between polymers and solvents, dispersive component of surface free energy of polymer and acidity of the surfaces of the polymers. The more the styryl-POSS were embedded, the stronger the interaction between the polymer surface and solvent, the dispersive component of the surface free energy and the acidity of the polymer surface were.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:727894 CAPLUS <<LOGINID::20071101>>
DOCUMENT NUMBER: 144:293510
TITLE: Plasma surface modification and characterization of POSS-based nanocomposite polymeric thin films for microfluidic devices
AUTHOR(S): Augustine, Brian H.; Hughes, Wm. Christopher; Maidment, Jessica S.
CORPORATE SOURCE: Department of Chemistry, James Madison University, Harrisonburg, VA, 22807, USA
SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2005), 46(2), 1267-1268
CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer Chemistry
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2005), 46(2), 1267-1268
CODEN: ACPPAY; ISSN: 0032-3934

AB Thin films of the nanocomposite copolymer poly(Me methacrylate)-polyhedral oligomeric silsesquioxane (PMMA-POSS) were deposited via-spin casting from a THF solution onto glass and polymeric substrates and modified in a remote oxygen plasma environment. Contact angle measurements indicated a dramatic increase in hydrophilicity with increasing plasma exposure from a contact angle >90° to <10° after a 15 s plasma exposure. Time-of-flight secondary ion mass spectroscopy (ToF-SIMS) data suggests that the iso-Bu groups present around the POSS cage are selectively removed in the first fifteen seconds of plasma exposure leaving a SiOx-rich surface after exposure. Plasma modified surfaces were deposited onto polymeric microfluidic separation devices. Electro-osmotic flow characteristics of glass, PMMA and PMMA-POSS coated surfaces will be discussed.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:983328 CAPLUS <<LOGINID::20071101>>
TITLE: Fabrication of Polymeric Microfluidic Devices
AUTHOR(S): Lindamood, S. Rozine; Augustine, Brian H.; Maidment, Jessica
CORPORATE SOURCE: Department of Chemistry, James Madison University, Harrisonburg, VA, 22807, USA
SOURCE: Abstracts, 56th Southeast Regional Meeting of the American Chemical Society, Research Triangle Park, NC, United States, November 10-13 (2004), GEN-702. American Chemical Society: Washington, D. C.
CODEN: 69FWAQ
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

SO Abstracts, 56th Southeast Regional Meeting of the American Chemical Society, Research Triangle Park, NC, United States, November 10-13 (2004), GEN-702 Publisher: American Chemical Society, Washington, D. C.
CODEN: 69FWAQ

AB Microfluidic devices were manufactured using poly(Me methacrylate) (PMMA). These devices were fabricated via hot embossing using an unpatterned piece of PMMA and a crystallog. etched silicon master. After hot embossing, a cover plate made of PMMA was thermally bonded to the PMMA channel in a similar process. To ensure complete bonding, a Me methacrylate (MMA) solution with UV initiator was injected around the edge of the chip, which sealed the unbonded spaces by capillary action. When exposed to UV light the initiator caused the MMA to polymerize and thus seal the two plates. Various channel designs were tested to determine the most effective configuration of the chip. In addition, PMMA chips were coated with nanocomposite thin films of PMMA - polyhedral oligomeric silsesquioxane (POSS). PMMA - POSS films were examined in order to modify the electro-osmotic flow (EOF) properties of the microchips and this will be discussed further.

L12 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:131470 CAPLUS <<LOGINID::20071101>>
DOCUMENT NUMBER: 128:138335
TITLE: Process for the production of gel particles with an aspecific binding core and a size-selective outer layer and their application for separation of components from solutions
INVENTOR(S): Gorog, Gyorgy; Lengyel, Zsolt; Graf, Laszlo; Nemeth, Peter; Naray-Szabo, Gabor; Petho, Arpad; Rakosi, Krisztina
PATENT ASSIGNEE(S): Hung.
SOURCE: Hung. Teljes, 20 pp.
CODEN: HUXXBU
DOCUMENT TYPE: Patent
LANGUAGE: Hungarian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
HU 74319	A2	19961230	HU 1995-137	19950117
PRIORITY APPLN. INFO.:			HU 1995-137	19950117

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AB The invention concerns gel particles with an aspecific binding core and size-selective outer layer that are suitable to sep. components from a solution based on their size, by closing out the larger mols. and letting the smaller ones penetrate to the core, where they are bound by aspecific

forces. The mol. exclusion size of the outer layer corresponds to the virtual diameter of a globular protein of 3-1000 kD, the average diameter of the gel particles is 0.001-10 mm with maximum 20% deviation from the average The core consist of either a polyacrylamide gel or a biopolymer with crosslinks and functional groups that can be either pos. or neg. charged, hydrofobic, and have increased activity or posses multiple aspecific binding capacity. The outer layer is bound to the core either covalently or by stable adsorption forces and is made either of a synthetic polymer, preferably acrylamide or a biopolymer, preferably dextran. The outer layer is either electrostatically neutral and does not contain hydrophobic groups or has groups which are oppositely charged to the functional groups in the core of the particle. The gel particles can sep. large particles from small particles from a solution either in a batch mode or in a chromatog. column using higher than atmospheric pressure. Thus, conjugates used in diagnostic immunoassays can be purified, e.g. dextran-galactosidase conjugate will stay in solution while free galactosidase and other components of the conjugation reaction are removed by a gel consisting of polyacrylamide core and dextran outer layer.

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